

II. AMENDMENTS TO THE CLAIMS

The following listing of claims replaces all prior versions, and listings, of claims in the application:

1. (Currently amended) A method of generating a mesh plane for an IC carrier design, the mesh plane being defined on a field of grid points, the method comprising~~the~~ steps of:

activating a substantial portion of grid points of an intended mesh plane with active lines; ~~and~~

removing at least one active line to generate the mesh plane; and

storing a set of active lines of the mesh plane as a multiple line shape.

2. (Original) The method of claim 1, wherein the activating step includes filling the substantial portion of grid points of the intended mesh plane with active lines, and then doubling a density of the intended mesh plane.

3. (Cancelled).

4. (Currently amended) The method of claim ~~[[3]]~~ 1, wherein the multiple line shape is selected from~~the~~ a group consisting of: a plus shape, a right angle, a square and a rectangle.

5. (Currently amended) The method of claim ~~[[3]]~~ 1, further comprising~~the~~ a step of storing a plurality of collinear active lines as an un-segmented line.

6. (Currently amended) The method of claim ~~[[3]]~~ 1, further comprising~~the~~ a step of constructing the mesh plane using the stored multiple line shape.
7. (Original) The method of claim 1, wherein the removing step includes removing at least one active line between a surrounded grid point, which is surrounded by other grid points that are not on a via, and the other grid points.
8. (Currently amended) The method of claim 1, further comprising~~the~~ a step of establishing a via pattern prior to the activating step, and wherein the removing step includes removing at least one active line to a grid point associated with a passthrough via that is not of ~~the~~a same network as the mesh plane.
9. (Original) The method of claim 1, wherein the removing step includes removing an active line between a dangling grid point that is not associated with a via and only one other grid point.
10. (Currently amended) A method of generating a mesh plane for an IC carrier design, the method comprising~~the~~ steps of:
- generating a mesh plane having a plurality of active lines; and
 - storing a set of active lines of the mesh plane as a multiple line shape.
11. (Original) The method of claim 10, wherein the mesh plane is defined on a field of grid points, and the generating step includes:

activating a substantial portion grid points of an intended mesh plane with active lines,
and

removing at least one active line to generate the mesh plane.

12. (Currently amended) The method of claim 11, wherein the removing step includes at least one of:

removing at least one active line between a surrounded grid point, which is surrounded by other grid points that are not on a via, and the other grid points;

removing any active line to a grid point associated with a passthrough via that is not of ~~the~~ a same network as the mesh plane based on a via pattern; and

removing an active line between a dangling grid point that is not associated with a via and only one other grid point.

13. (Currently amended) The method of claim 10, further comprising~~the~~ a step of storing a plurality of collinear active lines as an un-segmented line.

14. (Currently amended) The method of claim 10, further comprising~~the~~ a step of constructing the mesh plane using the stored multiple line shape.

15. (Currently amended) A computer program product comprising a computer useable medium having computer readable program code embodied therein for generating a mesh plane for an IC carrier design where the mesh plane is defined on a field of grid points, the program product comprising:

program code configured to activate a substantial portion of grid points of an intended mesh plane with active lines; ~~and~~

program code configured to remove at least one active line to generate the mesh plane; and

program code configured to store a set of active lines of the mesh plane as a multiple line shape.

16. (Cancelled).

17. (Currently amended) The program product of claim [[16]] 15, wherein the multiple line shape is selected from ~~the~~ a group consisting of: a plus shape, a right angle, a square and a rectangle.

18. (Currently amended) The program product of claim [[16]] 15, further comprising program code configured to store a plurality of collinear active lines as an un-segmented line.

19. (Currently amended) The program product of claim [[16]] 15, wherein the removing program code includes program code configured to remove at least one active line between a surrounded grid point, which is surrounded by other grid points that are not on a via, and the other grid points.

20. (Currently amended) The program product of claim 15, further comprising program code configured to remove any active line to a grid point associated with a passthrough via that is not of ~~the~~ a same network as the mesh plane.

21. (Original) The program product of claim 15, wherein the removing program code includes program code configured to remove an active line between a dangling grid point that is not associated with a via and only one other grid point.

22. (Original) A computer program product comprising a computer useable medium having computer readable program code embodied therein for generating a mesh plane for an IC carrier design, the program product comprising:

program code configured to generate a mesh plane having a plurality of active lines; and
program code configured to store a set of active lines of the mesh plane as a multiple line shape.

23. (Original) The program product of claim 22, wherein the mesh plane is defined on a field of grid points, and the generating program code includes:

program code configured to activate a substantial portion of grid points of an intended mesh plane with active lines, and

program code configured to remove at least one active line to generate the mesh plane.

24. (Currently amended) The program product of claim 23, wherein the removing program code includes program code configured to:

remove at least one active line between a surrounded grid point, which is surrounded by other grid points that are not on a via, and the other grid points;

remove any active line to a grid point associated with a passthrough via that is not of ~~the~~ a same network as the mesh plane; and

remove an active line between a dangling grid point that is not associated with a via and only one other grid point.

25. (Currently amended) The program product of claim 22, wherein the multiple line shape is selected from ~~the~~ a group consisting of: a plus shape, a right angle, a square and a rectangle.

26. (Original) The program product of claim 22, further comprising program code configured to store a plurality of collinear active lines as an un-segmented line.

27. (Original) An IC carrier design system comprising:

a mesh plane generating unit including:

means for activating a substantial portion of grid points of an intended mesh plane with active lines, the grid points being part of a field used to define the mesh plane; and

means for removing at least one active line to generate the mesh plane; and

a mesh plane storage unit including means for storing a set of active lines of the mesh plane as a multiple line shape.

28. (Original) The IC carrier design system of claim 27, wherein the mesh plane storage unit further includes means for storing a plurality of collinear active lines as an un-segmented line.

29. (Currently amended) The IC carrier design system of claim 27, wherein the mesh plane generating unit further includes:

means for removing at least one active line between a surrounded grid point, which is surrounded by other grid points that are not on a via, and the other grid points;

means for removing any active line to a grid point associated with a passthrough via that is not of ~~the~~ a same network as the mesh plane; and

means for removing an active line between a dangling grid point that is not associated with a via and only one other grid point.

30. (Original) The IC carrier design system of claim 27, further comprising a mesh plane constructor for reconstructing a mesh plane based on the multiple line shape.